Object Oriented Runtime Comparison

Object

Type

Field1 | value

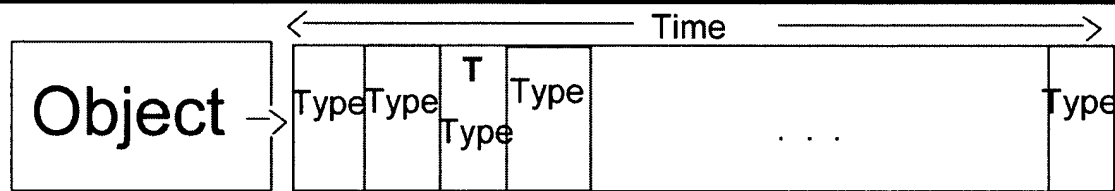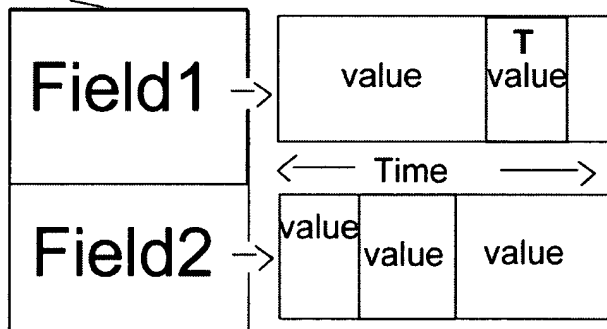### Field2 | value
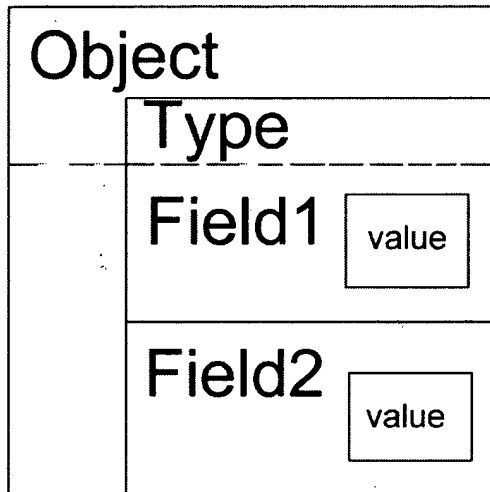
OOP

To evaluate Object.Field1:
1) Lookup static Type,
2) Lookup static Field1 location,
3) Retrieve value.

FIGURE 1

Time

Object → Type Type **T** Type . . . Type
Type

Temporal OOP

Field1 → value **T** value

Time

Field2 → value value value

To evaluate Object.Field1:
1) Lookup Type at time T,
2) Lookup Field1 location,
3) Lookup value at time T,
4) Retrieve value.

FIGURE 2

GENERAL ERROR CONDITIONS

OR

OR

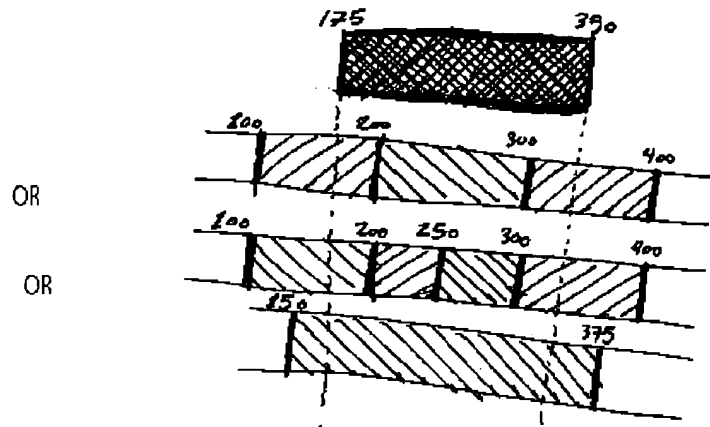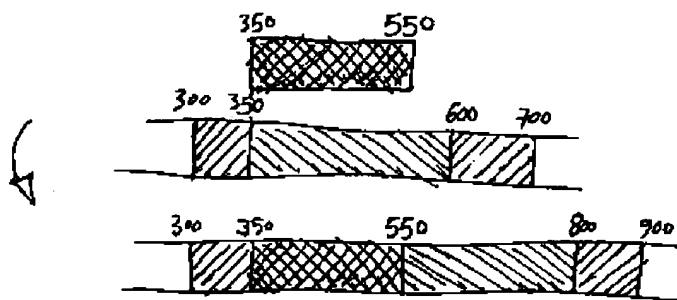FIGURE 3

ADD_NEW_ATTRVAL_SHIFT (ONE END-POINT)

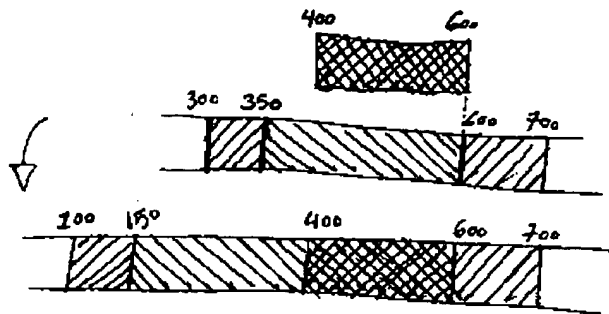

FIGURE 4

ADD_NEW_ATTRVAL_SHIFT (ONE END-POINT)
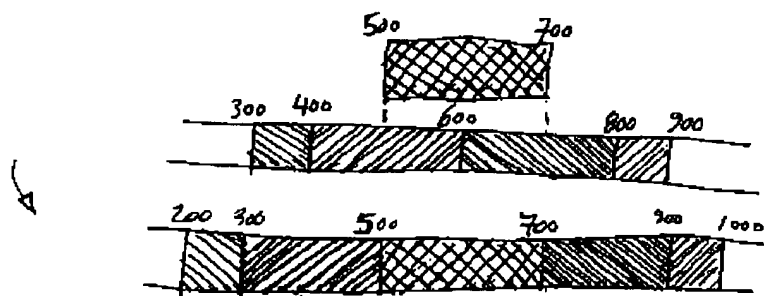

FIGURE 5

ADD_NEW_ATTRVAL_SHIFT (TWO END-POINTS)

FIGURE 6

GENERAL ERROR CONDITIONS

OR

OR
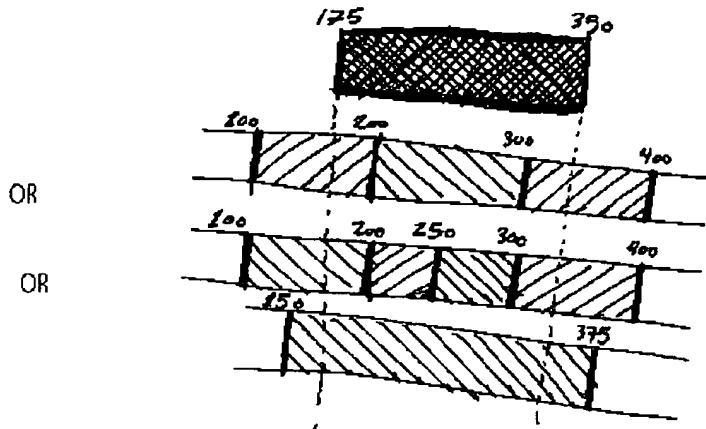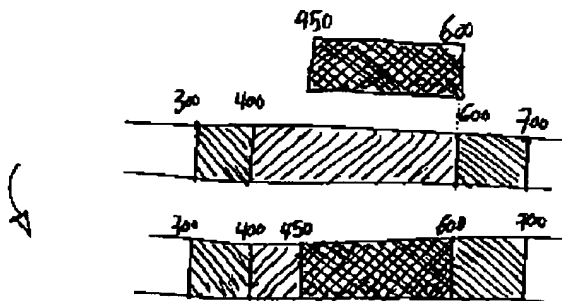
FIGURE 7

ADD_NEW_ATTRVAL_SQUEEZE (ONE END-POINT)

FIGURE 8

ADD_NEW_ATTRVAL_SQUEEZE (ONE END-POINT)

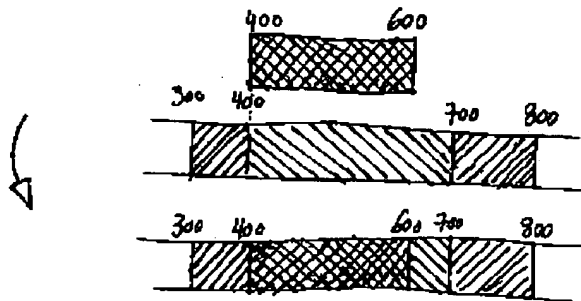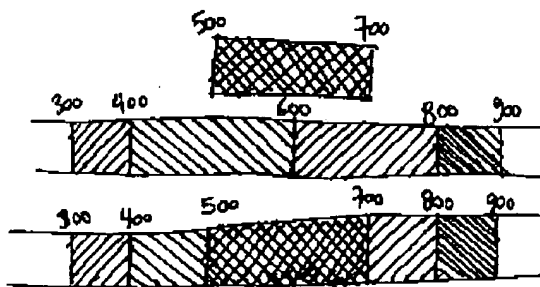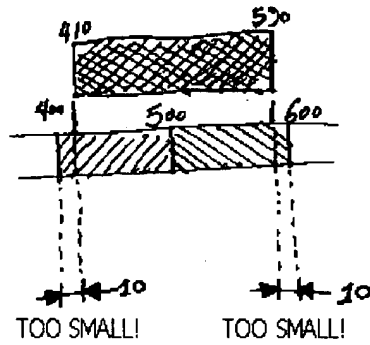
FIGURE 9

ADD_NEW_ATTRVAL_SQUEEZE (TWO END-POINTS)

FIGURE 10

ERROR CONDITION - ADD_NEW_ATTRVAL_SQUEEZE

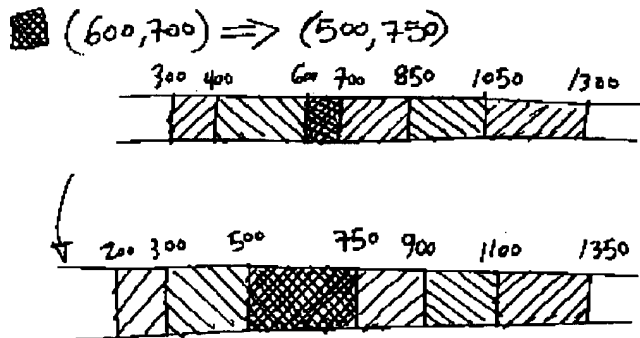When MIN_ATTRVAL_SIZE == 20

FIGURE 11

FINAL_EDIT_ATTRVAL_SHIFT

FIGURE 12

FINAL_EDIT_ATTRVAL_SQUEEZE

$(600, 700) \Rightarrow (500, 800)$

FIGURE 13

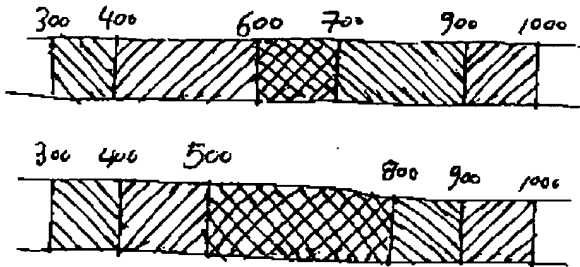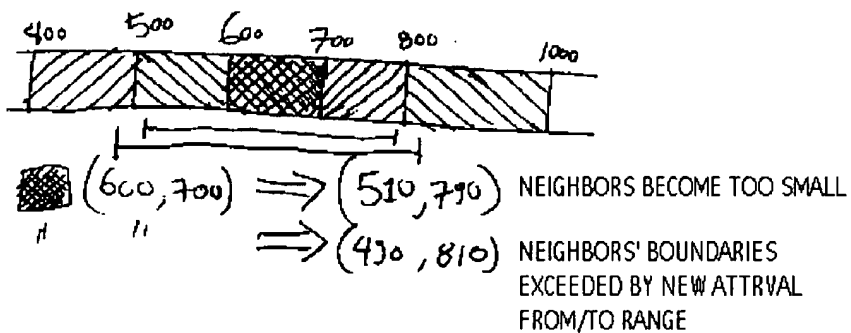ERROR CONDITIONS - FINAL_EDIT_ATTRVAL_SQUEEZE

$(600, 700) \Rightarrow (510, 790)$ NEIGHBORS BECOME TOO SMALL

$\Rightarrow (430, 810)$ NEIGHBORS' BOUNDARIES EXCEEDED BY NEW ATTRVAL FROM/TO RANGE

When MIN_ATTRVAL_SIZE == 20 (for example)

FIGURE 14

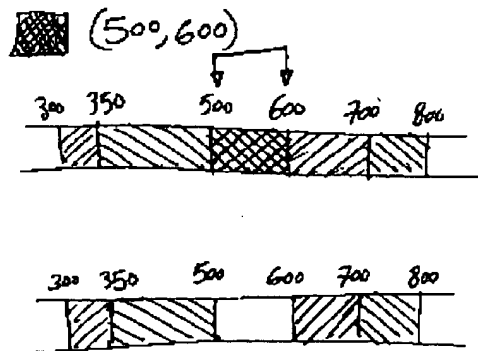FINAL_REMOVE_ATTRVAL_SHIFT
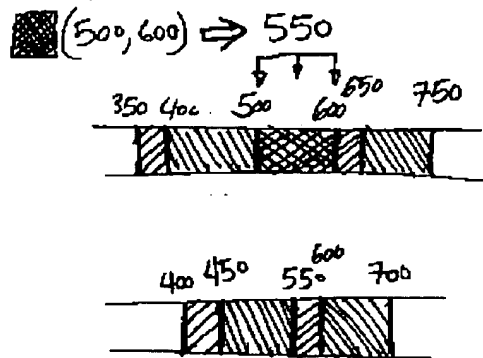
FIGURE 15

FINAL_REMOVE_ATTRVAL_LEAVE_GAP

FIGURE 16

FINAL_REMOVE_ATTRVAL_FILL

FIGURE 17